

ClosureTurf® is a three-component final cover system comprised of a structured geomembrane, an engineered turf, and a specified infill.

### System Components

#### **Geomembrane**

High-Density Polyethylene (HDPE) or Linear Low-Density Polyethylene (LLDPE) geomembrane

#### **Engineered Turf**

High-Density Polyethylene synthetic grass blades tufted into two layers of PP geotextile backing

#### **Sand Infill**

### Functions

**Barrier layer** - reduces infiltration

**Drainage layer** (with integrated drainage studs) - provides internal drainage and minimizes hydraulic head on liner

#### **Protection layer:**

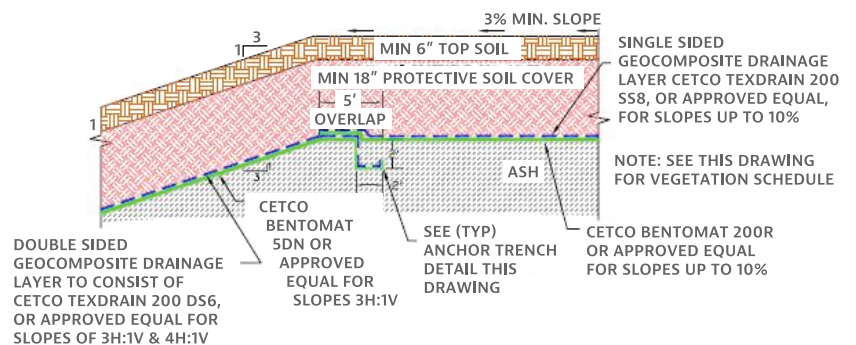
- Covers and protects the underlying geomembrane from UV degradation and wind uplift
- Minimizes wind and water erosion of sand infill

**Post-closure aesthetics** - blends in with natural surroundings

#### **Protection layer:**

- Covers and protects underlying geotextile backing and geomembrane from UV radiation
- Provides ballast for wind uplift protection
- Improves vehicle drivability
- Provides fire protection

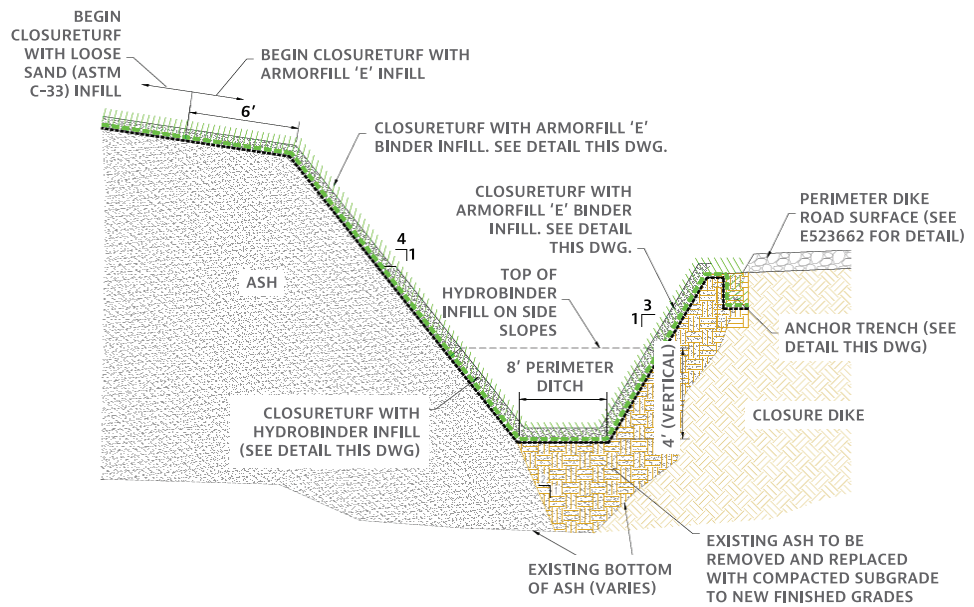
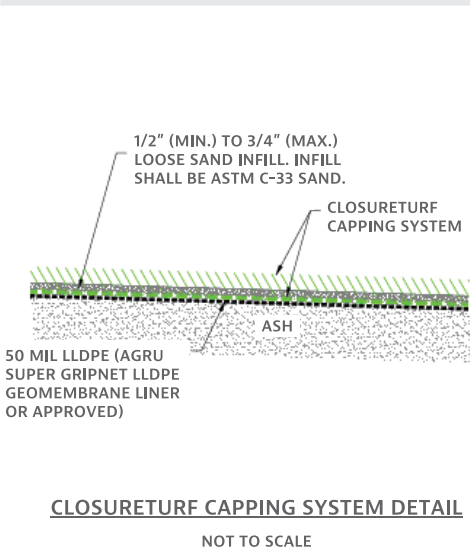
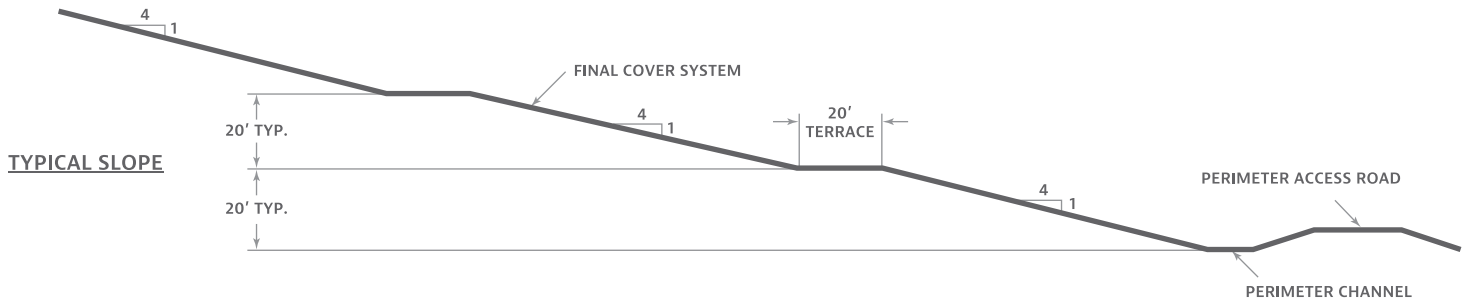
### Cap Material Options



**GCL FINAL COVER TYPICAL DETAIL**

NOT TO SCALE

# Typical Slope and Cap Detail



# Cap Permeability

CCR Rule requires no greater than  $10^{-5}$

With addition of geosynthetic liner, value would be estimated at  $10^{-12}$

K (cm/s)	$10^2$	$10^1$	$10^0=1$	$10^{-1}$	$10^{-2}$	$10^{-3}$	$10^{-4}$	$10^{-5}$	$10^{-6}$	$10^{-7}$	$10^{-8}$	$10^{-9}$	$10^{-10}$
K (ft/day)	$10^5$	10,000	1,000	100	10	1	0.1	0.01	0.001	0.0001	$10^{-5}$	$10^{-6}$	$10^{-7}$
Relative Permeability	Pervious		Semi-Pervious			Impervious							
Aquifer	Good		Poor			None							
Unconsolidated Sand & Gravel	Well Sorted Gravel	Well Sorted Sand or Sand & Gravel		Very Fine Sand, Silt, Loess, Loam									
Unconsolidated Clay & Organic				Peat	Layered Clay		Fat/Unweathered Clay						
Consolidated Rocks	Highly Fractured Rocks			Oil Reservoir Rocks	Fresh Sandstone	Fresh Limestone, Dolomite		Fresh Granite					

SOURCE: MODIFIED FROM BEAR, 1972